

AMENDMENTS TO CLAIMS

1-26. **(Canceled)**

27. **(Currently Amended)** A solid state image pickup device for obtaining a two-dimensional image, comprising:

a plurality of pixel units that are arranged two-dimensionally and each ~~include~~ includes a photoelectric conversion unit operable to convert incident light into a charge and an amplification unit operable to convert the charge into a voltage and output the voltage;

a plurality of noise signal removal units ~~that are each provided one for each~~ for a column associated with a pixel and operable to remove a noise contained in the voltage outputted from ~~said the~~ the amplification unit of each of said pixel ~~unit units belonging corresponding~~ to the column; and

a plurality of column amplification units operable to amplify the voltage outputted from ~~said the~~ the amplification unit of each of said pixel ~~unit units belonging corresponding~~ to the column and output the amplified voltage to each of said noise signal removal ~~unit units~~ corresponding to the column; and

a boosting voltage application unit operable to apply, to a load circuit that each of said column amplification units has, a power supply voltage and a boosting voltage higher than the power supply voltage,

wherein each of said pixel units, each of said noise signal removal units and each of said column amplification units ~~is~~ are configured as an N-type MOS circuit.

28. **(Currently Amended)** The solid state image pickup device according to claim 27, further comprising:

an impedance conversion unit operable to convert an impedance for the voltage outputted from each of said noise signal removal units; and

an output signal amplification unit operable to amplify the voltage outputted from said impedance conversion unit,

wherein ~~each of~~ said impedance conversion unit and said output signal amplification unit ~~is~~ are configured as an N-type MOS circuit.

29. **(Previously Presented)** The solid state image pickup device according to claim 28, wherein said impedance conversion unit is a source follower circuit.
30. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said column amplification units ~~includes~~ comprises:
an inverting amplifier; and
a switching unit provided between an input terminal and an output terminal of said inverting amplifier.
31. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said column amplification units ~~includes~~ comprises:
a plurality of column amplification circuits each having different amplification degrees;
and
a selection circuit that selects one of said column amplification circuits according to a level of the input voltage.
32. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said noise signal removal units ~~use~~ uses a capacitance distribution method.
33. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said noise signal removal units has a capacitor, and ~~said the~~ capacitor is an N-type MOS capacitor.
34. **(Canceled)**
35. **(Previously Presented)** The solid state image pickup device according to claim 27, wherein said boosting voltage application unit is a charge pump circuit that boosts the power supply voltage by a charge pump method.

36. **(Currently Amended)** The solid state image pickup device according to claim 35, wherein ~~said~~ the charge pump circuit boosts the power supply voltage by using a driving pulse which selects ~~a~~ the column.
37. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein said boosting voltage application unit is a bootstrap circuit that is provided within each of said column amplification units and applies, to ~~said~~ the load circuit, the power supply voltage and the boosting voltage higher than the power supply voltage.
38. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein ~~said~~ the load circuit is a first MOS transistor for load, and the power supply voltage is applied to a drain of ~~said~~ the first MOS transistor and the boosting voltage is applied to a gate of ~~said~~ the first MOS transistor.
39. **(Currently Amended)** The solid state image pickup device according to claim 38, wherein each of said column amplification units includes a second MOS transistor for driving,
a source of ~~said~~ the first MOS transistor is connected to a drain of ~~said~~ the second MOS transistor and the voltage outputted from ~~said~~ the amplification unit of each of said pixel ~~unit~~ units belonging corresponding to the column is applied to a gate of ~~said~~ the second MOS transistor through a clamp capacitance, and
the voltage outputted from ~~said~~ the amplification unit of each of said pixel ~~unit~~ units belonging corresponding to the column is amplified by an amplification degree determined by a ratio between resistance values of ~~said~~ the first and the second MOS transistors.
40. **(Currently Amended)** The solid state image pickup device according to claim 39, wherein each of said column amplification units
changes the amplification degree according to an input level of the voltage outputted from ~~said~~ the amplification unit of each of said pixel ~~unit~~ units belonging corresponding to the column.

41. **(Currently Amended)** The solid state image pickup device according to claim 39, wherein each of said column amplification units includes:
a plurality of column amplification units having different amplification degrees; and
a selection unit operable to select one of said column amplification units according to an input level of the voltage outputted from ~~said the~~ amplification unit of each of said pixel ~~unit~~ units belonging corresponding to the column.
42. **(Currently Amended)** The solid state image pickup device according to claim 39, wherein each of said column amplification units
increase the amplification degree as an input level of the voltage outputted from ~~said the~~ amplification unit of each of said pixel ~~unit~~ units belonging corresponding to the column decreases.
43. **(Currently Amended)** The solid state image pickup device according to claim 39, wherein each of said column amplification units further includes a third MOS transistor for making voltages at the drain and gate of ~~said the~~ second MOS transistor the same, and
initial state is set by a threshold voltage of ~~said the~~ second MOS transistor and a black level signal inputted to each of said column amplification units through the clamp capacitance from ~~said the~~ amplification unit of each of said pixel units ~~unit~~.
44. **(Currently Amended)** The solid state image pickup device according to claim 39, wherein each of said column amplification units
includes an interruption unit operable to interrupt a drive current of ~~said the~~ second MOS transistor except during a necessary operation period.
45. **(Currently Amended)** The solid state image pickup device according to claim 27, further comprising an impedance conversion unit operable to convert an impedance for the voltage outputted from each of said noise signal removal units.
46. **(Previously Presented)** The solid state image pickup device according to claim 45,

wherein said impedance conversion unit is a source follower circuit structured by using an NMOS transistor.

47. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said noise signal removal ~~unit~~ units has a capacitor, and ~~said~~ the capacitor is an N-type MOS capacitor.
48. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said column amplification units ~~are~~ is structured so as to be on a lower frequency side than a frequency band of ~~said the~~ amplification units ~~unit~~ unit of each of said pixel units, and bandwidth-shape a noise frequency.
49. **(Currently Amended)** The solid state image pickup device according to claim 27, wherein each of said noise signal removal units ~~are~~ is structured so as to be on a lower frequency side than a frequency band of ~~said the~~ amplification units ~~unit~~ unit of each of said pixel units, and bandwidth-shape a noise frequency.
50. **(Previously Presented)** A camera having said solid state image pickup device according to claim 27.